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DETERMINANT EFFICIENCY OF FINANCIAL INSTITUTIONS IN EMERGING MARKET

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Abstract

The aim of this research is to analyze the determinants of non-bank financial institution efficiency. The non-bank financial industry is one of the main contributors to Indonesia economic growth during the last 15 years. The non-bank financial industry will the consumer finance company industry. The panel data used in this research is from 2001-2016. The non-bank financial industry is also measured as one the fastest raising industries in the last 16 years. The six main financial ratios and related industry alliance impact the determinants of finance companies' efficiency. The financial ratios are firm size, capital structure, equity, asset ratio, income to total assets and cost to total assets. The empirical results show that the determinants of non-bank financial institution are income to total assets and cost to total assets.

Keywords: alliance; capital structure; efficiency; equity size; firm size.

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INTRODUCTION

Financial services sectors have originated to depending more on high-skilled workforces; however, the capacity and capability of their human resources have not developed significantly more alike (Demsetz, 1997). A financial company is considered as services company, one of the financial performance measurements of financial companies in the operational cost compared to operational income called cost to incomeratio (CIR).

The lower the CIR, the more efficient the financial services company will be. Conversely, the higher the CIR, then less efficient the company is. CIR is one of the key measurements of financial services companies. Harun (2016) stated that bank soundness could be measured by using several indicators. The research found that CIR significantly influences return on assets (ROA).

The key contribution of costs in financial services is the human resources'expense. Inflation rate will adjust the employees' annual income as per the regulation issued by government. Wong & Deng (2016) research on banks financials in ASEAN countries found that

most of the banks in ASEAN are less cost-efficient that cause to macro-economy consequences such as rising of non-labor operating expense and cost of human resources. Most of the ASEAN countries are facing high inflation circumstances such as Indonesia, Vietnam and Philiphine.

Service companies need to improve employees' productivity to exceed inflation. If the productivity increased compared to inflation, the cost rasio will decrease and profit margin will increase. On average, the cost to income ratio (CIR) of services companies should be about 80% (Bangun, 2012).

Though there are already many studies regarding the determinant of financial institution efficiency, particularly the banking sector, there is no decisive outcome yet. Consequently, it is essential to explore this issue, especially in an unique services' business such as non bank financial institution industry.

Mesa, Sánchez, & Sobrino (2014) indicates that the efficiency ratio will stop improving financial institutions, especially banks with total assets over than USD25 billion. The study recognizes additional variables which negatively impact the efficiency of banks, such as rivalry and loaning diversification, or impact positively, such as the corporate banking funding ratio and revenue divergence. Their conclusions suggest the requirement for different bank strategies depends on total assets to limit the business size of banks.

Rosman, Wahab, & Zainol (2014) described that Islamic banks were able to endure their business during the financial crunch period. This study also concludes that both profitability and size are the key elements of Islamic banking competence. Hence, the conclusions of this research have policy effects and stipulate to policy-making by offering empirical indication on the performance of the Islamic banks and their efficiency stages.

Pessarossi & Weill (2015) states that growth has a positive effect on cost-efficiency, the size of which depends on the extense of bank's ownership structure. Therefore, they suggest that minimum capital or invested equity requirements can add value to cost-efficiency ratio. Aiello & Bonanno (2016) indicates that BCCs has improved more than other banks, however efficiency has decreased over period, remaining to the effect of the present crisis.

Niţoi & Spulbar (2015) find hat better macroeconomic constancy provisions the efficiency of commercial banks. Banks which assume greater risks are less efficient. Hence, banks with less liquidity, with a less solvency rate and a better credit risk are more inefficient than extra careful risk organizations.

Řepková (2015) defines that the level of equity, liquidity risk, and less risky of the portfolio have a positive influence on banking efficiency. Return on Asset, interest rate, and gross domestic product damage efficiency in the CCR model. In the BCC model, the liquidity risk and riskiness of the portfolio have a positive effect on efficiency and gross domestic product reduce the efficiency.

The price of labor, total loan, and the total deposit have a negative influence on banks operational efficiency. Nigerian Bank will invest on technology to replace human resources expenses to improve the efficiency (Olarewaju & Obalade, 2015).

Singh & Fida (2015) found the returns-to-scale emphasized that decreasing returns-to-scale is the major form of scale inefficiency. The projected efficiency outcomes are further regressed on a set of descriptive variables, i.e., bank size, profitability, capital sufficiency, and

liquidity. The research used a Tobit model. Study reveals that bank size is irrelevant; profitability and liquidity are significantly positive descriptive variables to the efficiency of banks.

In the highly competitive banking industry, operating efficiency is positively and expressively affected by banks' asset quality, capital adequacy, credit risk, and liquidity. These results offer clear suggestion that high competitive banks in Egypt are renowned from low, competitive banks by carefully proposed financial policies to the banking industry (Eldomiaty, Fikri, Mostafa, & Amer, 2015).

Sufian & Kamarudin (2015) indicate that the balanced of income efficiency on the local Islamic banks is better matched to that of their international Islamic bank competitors. The study suggests hat income efficiency has a greater impact on earning efficiency stages. The result is that the firm size, asset quality, capitalization, liquidity, and management quality significantly influence the income efficiency of local Islamic banks cooperating in Malaysia, Indonesia, and Brunei (Costa-Campi, García-Quevedo, & Segarra, 2015).

In Ethiopia, the banking industry comprises around nineteen banks. The research took eight banks as a model size. The deposit and liquidity have a significant positive association with commercial banks efficiency (Tesfay, 2016).

Large and very large banks are more efficient than small and medium-sized banks with small banks having the lowest efficiency scores in the system. Banks with large branch distributions and those that have been in presence for a long time are less efficient than banks with less network (Matousek, Nguyen, & Stewart, 2016).

Tsionas & Mamatzakis (2017) showed that methodical efficiency differs on modification expenses in variable contributions. Developing economies robust possible in footings of efficiency post-financial crisis, mainly due to lower labor variation costs. The finales show some persistence in adjustment costs post the financial crisis.

The principal causes of increased microfinance institutions' efficiency are number of loanper staff, the age of the microfinance organization, small loan portfolio and write off relation; on the other hand, other financial services, individual lending methodology and the nature of institutions in being non-bank financial intermediary reduce the efficiency (Akram, Shan, Shaikh, & Yashkun, 2016).

Badunenko & Kumbhakar (2017) found that only state banks were able to increase their cost efficiency, while private banks, and especially foreign banks, lag behind their expenditure boundaries. Expenses and loan quality have significantly negative association with the efficiency of conventional banks, and they have a significantly positive association with the efficiency of participation banks (Batir, Volkman, & Gungor, 2017).

Sarmiento & Galán (2017) explained that additional capitalized banks are more cost and profit efficient, while banks assuming more credit risk are less cost-efficient but more profit efficient. Liquidity is initiated to affect cost efficiency only for local banks. Giant and foreign banks gain more from higher credit and market risk coverages, while small and local banks find it more valuable to be more exploited. Bank size, capital adequacy ratio, return on average equity, and the real interest rate has significant results on bank efficiency in Bangladesh (Banna, Ahmad, & Koh, 2017).

Onen & Tunik (2017) showed that inside elements are more applicable than outside

ones on banks efficiency. The monetary crisis was generated to have a minor influence on banks' efficiency in handling their financial properties. Gross domestic product and inflation had a negative association with bank efficiency due to the unanticipated inflation rate and unstable economic development.

METHOD

There are six variables namely profitability ratio, liquidity ratio, asset efficiency ratio, firm size, equity size, asset composition and the impact of related industry alliance. This research provides a specific dimension on the impact of linked industry alliance. The impact of linked industry alliance is to degree the impact of parent holding support in determining the efficiency. The panel data is showed below:

$$Y_{it} = a + b_1 Lev_{it} + b_2 PATA_{it} + b_3 FSi_{it} + b_4 All_{it} + b_5 BOPA_{it} + b_6 POPA_{it} + b_7 Equ_{it} + e$$

Description:

Y_{it} = Cost to Income Ratio
Lev = Debt to Equity Ratio
PATA = AssetsAllocation
FSi = Firm Size
All = Dummy of Alliance, 1 for related alliance and 0 for non-related alliance.
BOPA = Cost / Total Asset
POPA = Income / Total Asset
Equ = Equity Size

According to the preceding researches, the hypotheses are as follow:

Table 1
Research Hypothesis

Hypothesis	Variables	Sign	Previous Research
H1	Capital Structure	(+)	Banna et al.(2017), Eldomiaty et al.(2015)
H2	Asset Allocation Data	(+)	Mesa et al. (2014)
H3	Firm Size	(+)	Banna et al.(2017), Costa-Campi et al.(2015), Singh & Fida(2015), Matousek et al.(2016)
H4	Alliance	(+)	Pessarossi & Weill(2015), Badunenko & Kumbhakar (2017)
H5	Cost to Assets Ratio	(+)	Tsionas & Mamatzakis(2017),Batir et al.(2017)
H6	Income to Assets Ratio	(+)	Sufian & Kamarudin(2015)
H7	Equity Size	(+)	Rosman et al.(2014), Pessarossi & Weill(2015), Řepková(2015)

Source: Processed data (2018)

The variables and firm size were initiated by Johan et al (2012) and Vander-Vennet (2002). The ratio and measurements are described as follow:

Table 2
Research Variable

Variables	Sign	Previous Research
Efficient Ratio	Eff = Expense/ Revenue	Setiawan, Amboningtyas, & Aryanti, (2019)
Capital Structure	LEV = Total Debt/ Total Equity	Johan, Siregar, Santosa, & Maulana(2012)
Asset Allocation Data	PATA = Productive Asset/ Total Asset	Johan et al.(2012)
Firm Size	Fsi = ln (Total Asset)	Vennet(2002), Banna et al.(2017), Costa-Campi et al.(2015), Singh & Fida(2015), Matousek et al.(2016)
Alliance	Alliance = 1; Non Alliance = 0	Badunenko & Kumbhakar(2017)
Cost to Assets Ratio	BOPA = Expense/ Total Asset	Johan et al.(2012)
Income to Assets Ratio	POPA = Income/ Total Asset	Johan et al.(2012)
Equity Size	Equ = Ln (Equity)	Johan et al.(2012)

The information in the study is panel data containing cross section and time series data from 2001-2016.The study used secondary information which was composed from numerous authorized publication by the banks. The sample is the consumer finance company which delivered their authorized annual report during the study period. The research contains 90 consumer finance companies. The finance companies are supervised under the Otoritas Jasa Keuangan (OJK). The interpretation of the variables is explained in table 2.

DISCUSSION

From 1,350 samples, the maximum leverage of non-bank companies is 747x equity, while the lowest is 0 or no debt. The average median of leverage is 1.28x.

Table 3
Descriptive Statistic

Equation	N	Minimum	Maximum	Median	Standard Deviation
Leverage	1,350	0.00	747.66	1.28	20.37

Equation	N	Minimum	Maximum	Median	Standard Deviation
PATA	1,350	0.00	913.58	75.16	41.52
Firm Size	1,350	0.00	574,911,647.00	33,304,637.56	4,004,731.40
Alliance	1,350	0.00	1.00	0.47	0
BOPA	1,350	-0.53	1,345.28	3.17	0.50
POPA	1,350	-0.41	1,500.70	3.91	41.55
Equity	1,350	-494,909.00	87,927,596.00	786,274.73	48.16
					5,787,874.80

Source: Processed data (2018)

The average ratio or productive assets to total assets is 75.16%, reflecting on a 75% ratio or above the OJK regulation that requires 40% ratio. For the company's size, the largest asset is about Rp574 billion and the smallest is Rp33 billion. Meanwhile, about the value of equity, there are companies that have a negative equity value with an average of Rp786 billion.

As many as 47% of the samples have alliance to other financial group companies. The average ratio of costs and income to productive assets are %.

Table 4
Research Results

Equation	PLS		FEM		REM	
Leverage	0.1073		0.5593		0.3577	
	(-1.4651)		(-1.4527)		(-1.4270)	
PATA	-0.2887		0.0378		-0.0953	
	(-0.7337)		(-0.7388)		(-0.7220)	
Firm Size	-0.1947		37.4211		19.2623	
	(-33.500)		(-39.114)		(-35.668)	
Alliance	-100.7880	*	23.9267		-92.5630	
	(61.0762)		(-200.92)		(-86.492)	
BOPA	10.7721	***	11.5992	***	11.2953	***
	(2.3379)		(2.2347)		(-2.2279)	
POPA	-8.9757	***	-9.6353	***	-9.3894	***
	(2.0178)		(-1.9338)		(-1.9257)	
Equity	-14.0581		-31.4875	*	-23.6216	
	(17.3778)		(-18.951)		(-17.918)	

Source: Processed data (2018)

Dummy estimation coefficient 1 for related foreign owned finance companies and 0 for non related foreign owned finance companies. Numbers in ( ) states the estimated standard error.

*) Significant at 10% level**) Significant at 5% level***) Significant at 1% level

The significant results of Pooled Least Squared (PLS) will be re-tested using Fixed Effect Model (FEM) dan Random Effect Model (REM) test. Subsequently, The Chow test, Hausman test and LM test will be expended to match the results between PLS and FEM, REM and FEM and PLS and REM respectively.

Table 5
Panel Data Test Results

	Model		
	Chow	**Haushman**	**LM**
Result	0.0000	0.6064	0.00000
Selected Model	REM		

Source: Processed data (2018)

The test marks show that leverage has no significant effect on efficiency. It is not significant at α = 5%. However, the leverage is 0.3577 which means if the leverage increase by 1 percent, the efficiency will be increased by 0,3577%. The sign of leverage is positive to efficiency. It advises that the third-party funds on capital, have no effect on efficiency. Deposit interest rates also have no effect on efficiency. Third-party funds are only a financial institution debt. These results vary from studies by Olarewaju & Obalade (2015) and Tesfay (2016).

The productive assets to total assets (PATA) ratio also have no significant result on the efficiency on the consumer finance firm. It is not significant at α = 5%. Due to the PATA ratio, it is not directly touched by the value of income received from the total asset. It shows that there is still an asset composition challenge in Indonesia financial market. These results differ from studies by Batir et al.(2017) and Olarewaju & Obalade (2015). The sign of PATA is negative, which means that the higher of productive asset, the less efficient the financial institution is.

The company size does not have a positive effect on the finance company. It shows that not all large or small companies will be more efficient. It is not significant at α = 5%. Efficiency depends on how management grips it. These results differ from studies by Banna et al.(2017), Costa-Campi et al.(2015), Singh & Fida(2015).

The quotient of operational costs to total assets has a significant positive effect on efficiency. It is significant at α < 1%. It results 11.2953, shows that the operational costs are an important factor in efficiency control. It also shows that the company needs to maintain the ratio of operation costs total assets.The highest of operational cost to total asset ratio will improve the cost to income ratio of the financial institution. The results shows that there is potential improvement for efficiency in Indonesia financial market.This result is in line with Tsionas & Mamatzakis(2017) andBatir et al.(2017).

Operating income to total assets also has significant negative effect on efficiency. It is significant at α < 1%. The test result show that -9.3894 is negative, which mean the higher of operational income to total assets ratio will bring the lower of efficiency ratio. It is proved that the higher income will bring lowering the cost. It indicates that the finance companies need to determine the value of income from earning assets.Income is the key income driver for any

financial institutions, especially the interest rate conditions in Indonesia. The interest rate in Indonesia is still higher than the interest rate of other countries that reason the sign is dissimilarity. The results were supported bySufian & Kamarudin(2015).

The equity value does not indicate any effect on efficiency on the finance companies. The sign is negative. It is not significant at α = 5%. This is in line with the result in hypothesis 1 above, where the leverage has no direct effect. Equity size has no direct cost impact to the financial institutions. In Indonesia, the higher equity will be the higher cost for the company and most of the company, especially foreign investment, will prefer to invest at the minimum amount of equity in foreign country. This result differs from the research of Rosman et al. 2014).

The alliance also showed has no positive effect on the accomplishment of company efficiency. The sign is negative. It is not significant at α = 5%. It shows that the synergy between parent or holding company and finance company is not focused on realizing the efficiency. It is believed that the support from the parent or holding company is in improving the business results than focused on efficiency. It shows that the investment of foreign company in Indonesia, focuses n the earning than the expenses The results in line Badunenko & Kumbhakar (2017) states that global banks were lagging behind in their cost limits.

CONCLUSIONS

The result shows that productive asset is the key element to be efficient. The cost to assets and income to assets show significant impact to efficiency. It is significant at α< 1%. On the other side, the leverage ratio, operational costs to total assets and firm size have an positive implication to the efficiency of finance company. However, equity size, alliance impact, income to total asset and asset allocation have negative impact to the efficiency.

IMPLICATIONS

The management of consumer finance companies needs to increase the portfolio size of loans provided to be able to achieve efficiency. Equity size and firm size are not the key elements to improve the efficiency.

LIMITATIONS AND SUGGESTIONS

The limitation of this research is only focused on single industry which is consumer finance. Aside from the single industry, this research is also limited in terms of research scope as it was only conducted on financial performance. These limitations may, therefore, hamper us to generalize the results. Further research may be performed by extending the number of industry such as banking, insurance, securities, pension fund and other financial services and adding more financial variables such as macroeconomics variables (Chan & Karim, 2010) such as inflation, exchange rate, interest rate and financial liberations (Hermes and Nihung, 2018)

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